

What is claimed is:

1. A system for providing multiple language support for at least one application program, the system comprising:

5 a plurality of language resource bundles comprising associations between language keys and displayable language-sensitive elements, each resource bundle corresponding to a different language; and

sub a language resource manager configured to receive a first language key from an application program, locate a language resource bundle corresponding to a  
10 currently-selected language, identify a language-sensitive element associated with the first language key, and provide the identified language-sensitive element to the application program for display in a graphical user interface.

2. The system of claim 1, further comprising:

15 an application program configured to provide a language key to the language resource manager, receive a language-sensitive element from the language resource manager, and display the language-sensitive element in a graphical user interface.

20 3. The system of claim 1, wherein at least one language-sensitive element is selected from the group consisting of a text string, an icon, a graphic, and a video clip.

4. The method of claim 1, wherein the language resource manager is further configured to display a language switching mechanism in the graphical user interface for changing the currently-selected language in response to user input.

5 5. The method of claim 4, wherein the language switching mechanism is selected from the group consisting of a drop-down list, a menu, a button, an edit box, and an icon.

10 6. The method of claim 1, wherein the language resource manager is further configured to change the currently-selected language in response to at least one keystroke.

15 7. The system of claim 1, further comprising:  
a language switching component configured, in response to a change in the currently-selected language, to send to the language resource manager a language key corresponding to a first language-sensitive element displayed in the graphical user interface, receive from the language resource manager a second language-sensitive element, and replace the first language-sensitive element with the second language-sensitive element in the graphical user interface.

20 8. The system of claim 7, wherein the language switching component is further configured to replace each language-sensitive element displayed in the

graphical user interface with a new language-sensitive element in response to a change in the currently-selected language.

5 9. The system of claim 7, wherein the language switching component is further configured to preempt the application program, save a state of the application program, discard the graphical user interface being currently displayed, generate a new graphical user interface comprising at least one new language-sensitive element provided by the language resource manager, restore the state of the application program, and resume execution of the application program.

10 10. The system of claim 1, wherein the language resource manager is in communication with a plurality of applications to receive language keys and provide language-sensitive elements.

15 11. The system of claim 1, wherein at least one association in a language bundle is specific to a particular application.

20 12. The system of claim 1, wherein at least one association in a language bundle is applicable to a plurality of applications.

13. The system of claim 1, further comprising:

a parser configured to parse a language resource file comprising descriptors of language keys and descriptors of language-sensitive elements and to generate therefrom a language resource bundle.

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14. The system of claim 13, wherein the language resource file comprises human-readable text.

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15. The system of claim 13, wherein at least one descriptor of a language key is selected from the group consisting of a string, a character, a number, and a symbol.

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16. The system of claim 13, wherein at least one descriptor of a language-sensitive element comprises a Unicode string.

17. The system of claim 13, wherein at least one descriptor of a language-sensitive element comprises an address.

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18. The system of claim 17, wherein the address comprises a file name.

19. The system of claim 17, wherein the address comprises a uniform resource locator (URL).

20. The system of claim 1, wherein the language resource manager is a component of a framework used by the at least one application program.

5 21. A method for providing multiple language support for at least one application program in a computer system comprising a plurality of language bundles, each language bundle corresponding to a particular language and comprising associations between language keys and displayable language-sensitive elements, the method comprising:

receiving a first language key from an application program,

10 locating a language resource bundle corresponding to a currently-selected language;

identifying a language-sensitive element associated with the first language key; and

15 providing the identified language-sensitive element to the application program for display in a graphical user interface.

22. The method of claim 21, further comprising:  
displaying the language-sensitive element in a graphical user interface.

20 23. The method of claim 21, wherein at least one language-sensitive element is selected from the group consisting of a text string, an icon, a graphic, and a video clip.

24. The method of claim 21, further comprising:

displaying a language switching mechanism in the graphical user interface for changing the currently-selected language in response to user input.

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25. The method of claim 24, wherein the language switching mechanism is selected from the group consisting of a drop-down list, a menu, a button, an edit box, and an icon.

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26. The method of claim 21, further comprising:

changing the currently-selected language in response to at least one keystroke.

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27. The method of claim 21, further comprising:

in response to a change in the currently-selected language:

sending a language key corresponding to a first language-sensitive element displayed in the graphical user interface;

receiving a second language-sensitive element in response to the language key; and

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replacing the first language-sensitive element with the second language-sensitive element in the graphical user interface.

28. The method of claim 27, further comprising:

replacing each language-sensitive element displayed in the graphical user interface with a new language-sensitive element in response to a change in the currently-selected language.

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29. The method of claim 27, further comprising:

preempting the application program;

saving a state of the application program;

discarding the graphical user interface being currently displayed;

generating a new graphical user interface comprising at least one new language-sensitive element received in response to a language key;

restoring the state of the application program; and

resuming execution of the application program.

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30. The method of claim 21, receiving language keys from a plurality of applications and;

providing corresponding language-sensitive elements to each application.

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31. The method of claim 21, wherein at least one association in a

language bundle is specific to a particular application.

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32. The method of claim 21, wherein at least one association in a

language bundle is applicable to a plurality of applications.

33. The method of claim 21, further comprising:  
parsing a language resource file comprising descriptors of language keys and  
descriptors of language-sensitive elements to generate therefrom a language  
5 resource bundle.

34. The method of claim 33, wherein the language resource file comprises  
human-readable text.

35. The method of claim 33, wherein at least one descriptor of a language  
key is selected from the group consisting of a string, a character, a number, and a  
symbol.

36. The method of claim 33, wherein at least one descriptor of a language-  
15 sensitive element comprises a Unicode string.

37. The method of claim 33, wherein at least one descriptor of a language-  
sensitive element comprises an address.

38. The method of claim 37, wherein the address comprises a file name.  
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39. The method of claim 37, wherein the address comprises a uniform  
resource locator (URL).



40. A computer program product for providing multiple language support for at least one application program, the computer program product comprising:

5 a plurality of language bundles, each language bundle corresponding to a particular language and comprising associations between language keys and displayable language-sensitive elements;

program code for receiving a first language key from an application program,

program code for locating a language resource bundle corresponding to a currently-selected language;

10 program code for identifying a language-sensitive element associated with the first language key; and

program code for providing the identified language-sensitive element to the application program for display in a graphical user interface.

41. The computer program product of claim 40, further comprising:

15 program code for displaying the language-sensitive element in a graphical user interface.

42. The computer program product of claim 40, wherein at least one  
20 language-sensitive element is selected from the group consisting of a text string, an icon, a graphic, and a video clip.

43. The computer program product of claim 40, further comprising:

program code for displaying a language switching mechanism in the graphical user interface for changing the currently-selected language in response to user input.

5      44.    The computer program product of claim 43, wherein the language switching mechanism is selected from the group consisting of a drop-down list, a menu, a button, an edit box, and an icon.

45.    The computer program product of claim 40, further comprising:  
program code for changing the currently-selected language in response to at least one keystroke.

46.    The computer program product of claim 40, further comprising:  
in response to a change in the currently-selected language:  
program code for sending a language key corresponding to a first language-sensitive element displayed in the graphical user interface;  
program code for receiving a second language-sensitive element in response to the language key; and  
program code for replacing the first language-sensitive element with the second language-sensitive element in the graphical user interface.

47.    The computer program product of claim 46, further comprising:

program code for replacing each language-sensitive element displayed in the graphical user with a new language-sensitive element in response to a change in the currently-selected language.

5 48. The computer program product of claim 46, further comprising:  
program code for preempting the application program;  
program code for saving a state of the application program;  
program code for discarding the graphical user interface being currently  
displayed;  
10 program code for generating a new graphical user interface comprising at  
least one new language-sensitive element received in response to a language key;  
program code for restoring the state of the application program; and  
program code for resuming execution of the application program.

15 49. The computer program product of claim 40, receiving language keys  
from a plurality of applications and;  
program code for providing corresponding language-sensitive elements to  
each application.

20 50. The computer program product of claim 40, wherein at least one  
association in a language bundle is specific to a particular application.

51. The computer program product of claim 40, wherein at least one association in a language bundle is applicable to a plurality of applications.

5 52. The computer program product of claim 40, further comprising:  
program code for parsing a language resource file comprising descriptors of  
language keys and descriptors of language-sensitive elements to generate  
therefrom a language resource bundle.

10 53. The computer program product of claim 52, wherein the language  
resource file comprises human-readable text.

15 54. The computer program product of claim 52, wherein at least one  
descriptor of a language key is selected from the group consisting of a string, a  
character, a number, and a symbol.

55. The computer program product of claim 52, wherein at least one  
descriptor of a language-sensitive element comprises a Unicode string.

20 56. The computer program product of claim 52, wherein at least one  
descriptor of a language-sensitive element comprises an address.

57. The computer program product of claim 56, wherein the address  
comprises a file name.

58. The computer program product of claim 56, wherein the address comprises a uniform resource locator (URL).

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